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Metabolites consist of biological molecules utilized in metabolic processes, i.e. adenosine triphosphate (ATP). Detection of metabolites s valuable on two fronts: 1) Clinically, metabolites can report on the development of specific diseases;¬ 2) While those found in environmental samples can indicate toxicity and the activity of specific organisms.

However, most currently available medical diagnostic tests require extensive resources—large instruments, specialized technicians, etc.—that are inaccessible in developing countries and too expensive for continuous monitoring. To address this need, there is a push to develop medical diagnostics and environmental tests that can be used outside of a complex clinical laboratory and can present results in a simple format (e.g. a visual change or digital readout). Personal glucose meters and pregnancy tests are well-known examples of existing accessible diagnostic tests. Despite these limited examples, there is still a need to create a broader range of accessible diagnostics and, more importantly, to develop a toolbox of materials that can be used in the rational design of equipment-free sensors for any biological analyte. Herein, we interrogate the capacity of graphene oxide nanomaterials for point of care detection and *in situ* sensing of metabolites.